


INNER SHIELD FOR APPARATUS FOR PULLING UP SINGLE CRYSTAL

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Abstract of JP10291896

PROBLEM TO BE SOLVED: To prevent the drop-out of a surface layer part based on silicon carbization in the upper part of an inner shield and simultaneously to suppress the adhesion and deposition of the silicon on the inside surface in the lower part of the inner shield so as to prevent the degradation in the temp. distribution within a crucible by constituting the base body of the inner shield of an extruded graphite member and coating the upper apt of the member with pyrolysis carbon.

SOLUTION: The base body of this inner shield 9 for an apparatus for pulling up a single crystal consists of the extruded graphite member and the upper part of the member is coated with the pyrolysis carbon. The base body of the inner shield preferably has a bulk density of 1.50 to 1.75 g/cm³, porosity of $\geq 15\%$, total pore volume of ≥ 0.07 cm³/g, average pore radius of ≥ 1 μ m, bending strength of ≥ 10 MPa and Shore hardness of ≥ 20 . The extruded graphite member has a tissue structure more porous than the isotropic materials used thus far and therefore, the vapor deposited silicon is smoothly penetrated into the graphite base body and the deposition of the silicon on the surface is suppressed. The pyrolysis carbon has the dense tissue structure.

